PRACTICAL HORSE DENTISTRY

BY

J. COHN AND F. SWALES

Hugh Cecil Earl of Lonsdale.

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PRACTICAL
HORSE DENTISTRY.

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AS A

REMEDY

FOR

LOSS OF APPETITE, INDIGESTION, POOR CONDITION;

ALSO

REARING, PULLING, BOLTING,

AND OTHER

DISAGREEABLE HABITS AND DANGEROUS VICES,

WITH A NEW AND SIMPLE METHOD OF TELLING

THE AGE OF THE HORSE.

BY

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AND

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PRACTICAL
HORSE DENTISTRY.

INTRODUCTION.

"*Of all pain, I know none that hath more torture than malady of the Teeth.*"

NUMEROUS elaborate works on the horse have appeared from time to time—written by very eminent authorities on the subject—but one and all have entirely omitted to mention anything appertaining to the mouth, which is really one of the most important parts of the animal.

Well-known professors of veterinary surgery have contributed volumes on the treatment of the digestive organs, but have signally failed to mention the teeth in any way as the primary cause of these disorders.

The authors of works on horse-breaking, stable management, and bitting, seem equally deficient in their knowledge of the causes which lead more directly than any other to the contraction of the numerous vices they profess to be able to remedy.

Many pages have been devoted to rearing horses, and various remedies advised, the most ludicrous of which is "to break a bottle filled with water on the head of the animal, at the time of rearing." How it is possible, by this means, to allay the excruciating pain caused by the bit coming in contact with a "wolf" tooth, or a jointed snaffle forcing the inner surface of the mouth against the sharp edges of the molars, we cannot surmise, when we know from positive facts that, in the majority of cases, either one or other of these tormentors are the sole cause.

The acute pain endured by our dumb friend, through sharp, uneven, and defective teeth is well known to those conversant with practical equine dentistry. To the uninitiated, the following disagreeable and dangerous vices can be enumerated as owing their origin to the above cause, viz., *rearing*, *star-gazing*, *pulling*, (generally on one side), *slobbering*, *tossing* the head up and down, and disinclination to be bridled.

Other indications which the horse-keeper cannot fail to notice would be *irregular appetite*, a slow and peculiar motion of crossing the jaws when feeding, whereby the natural grinding sound, familiar to horsemen, is absent, which is followed by a tucked-up appearance with staring coat, denoting plainly that the animal is out of sorts. There is a loss of condition, deficient stamina, and consequent digestive disorders, seriously affecting the general health of the animal, in many cases diagnosed by the veterinarian as something else, and for which balls and drinks are advised and administered.

Indigestion affects the horse in various ways, but it is an undisputed fact that, apart from the indigestibility of the food itself, there are few causes so productive of indigestion as defective teeth, which prevent proper mastication ; the food is therefore swallowed with a less proportion of the admixture of saliva than is necessarily required.

It might not be generally known that England is far behind America and the Continent of Europe generally in the exercise or knowledge of equine dentistry. In those countries the economic and beneficial effect has been so very successfully proved that large firms find it to their advantage to keep a practical operator permanently employed.

Some years ago a test was made by an Express Company, who had 600 horses in constant use, twenty-five of which were indiscriminately selected for proper dental treatment, and separately weighed. Their oats and maize were reduced two quarts per day each. After the first month a great improvement in their general condition was apparent, continuing during the second and third months, when they were again weighed, and it was found that an average increase of 48 lbs. per head was the result. The test lasted during the hot months of July, August and September, when flatulent colic was very prevalent in the stable, yet not one single case had occurred amongst these twenty-five horses! Since this trial, and whenever a car-load of newly purchased young horses arrives, it is considered a waste to feed them until their teeth are examined and put in proper shape.

Rasping the teeth has been practised by farriers from time immemorial, but any one knowing the conservative nature of these men could not expect any improvement in the mode of operation or instrument used; yet equine dentistry as practised in the United States at the present time is equally as much improved as human dentistry, and there may be some persons living who will recollect the time when barbers and blacksmiths were the leading practitioners of this profession, handed down by tradition from the ignorance of long-past ages. Equine dentistry as practised by the farrier is in most cases useless, in others barbarous, and is well exemplified by one when asked how long it generally took to rasp the molars replying, "Why keep on rasping till the mouth bleeds." The majority of farriers are equally as cruel in their treatment of horses.

There is no doubt that the rasping of the teeth (or most likely the gums) has been monopolised by the farrier on account of his strength, but with the progress of time such a great improvement has been made abroad in the instruments used for this purpose, that knowledge and skill have taken the place of brute force.

We are digressing somewhat from our original ideas, but knowing the difficulty of impressing on the minds of the public entirely new theories and practices, we deem it advisable, in the interest of owners and with due regard to our most useful friend, to quote instances that have come under our personal observation, of the torture and suffering endured by horses through ignorance of the primary cause which leads to their various disagreeable habits and vices.

Amongst the many cases treated was that of a bay horse, whose only fault was pulling on one side. The owners—a firm of West-end job-masters—rarely sent this horse out in the day-time, it being difficult to drive him in traffic without a side rein. A client of ours had occasionally hired this animal for long-distance driving, and being pleased with its fast pace made an offer to purchase, which was readily accepted; afterwards the horse was sent to us for treatment.

Upon examination of the mouth we found great cruelty had been used; the jaw was fractured in two places, the tongue swollen and injured. We found in the upper jaw part of a "wolf" tooth imbedded in the flesh—the lower half had probably been broken off. This necessitated a delicate operation to extract the remainder of the tooth. The molars were floated and put in proper order, and after two days' rest the animal was used in harness. The horse went well with his head in the right place, and improved in condition so much in one week that it was hardly possible to imagine it could be the same animal, and, what is of equal importance to all true lovers of this beautiful creature, it was free from pain and suffering.

Horses show the presence of irregular teeth in various ways, as instanced by another case which came to us for treatment.

The animal had been used as a hack, but had developed the disagreeable habit of incessantly tossing the head up and down when bridled. This is usually considered due to unsuitable bits, many of which had been tried, by the look of the mouth, which was frightfully lacerated and torn ; the lower jaw was swollen to twice the normal size, no doubt due to the curb chain. An examination showed that one of the molars had grown irregular, puncturing the side of the tongue. There was also that frequent tormentor, the wolf tooth, but hardly visible to those inexperienced on this subject. Our treatment was very simple but effective, as the owner, a young lady of nervous temperament, was able to ride the animal with perfect safety, and a better mannered hack, or one more suitable for her requirements, it would be impossible to find.

These are two cases out of many. Thousands of horses are suffering untold misery from similar causes, leading directly to many serious runaway accidents.

We call the attention of our readers to the unnatural positions in the carriage of the head amongst all kinds of riding and driving horses, not excepting those in the British army, which are, unfortunately for their comfort, exempt from participating in any progressive movement that would, if adopted, improve their condition considerably.

It is a most deplorable fact that so many animals are condemned to endure punishment through the conservatism of those in command. On the Continent, anything that conduces to the comfort and contentment of the horse is greedily and instantly tried.

Cruelty to animals is practised in many different ways—we do not say wilfully—thoughtlessness and ignorance claim the majority of these cases. Convictions are often obtained against the owners and drivers of lame horses, yet the lameness might not cause any feeling of pain; so with a sore shoulder, in some cases merely an abrasion of the skin; yet these are serious offences in the eye of the law, and in some instances deservedly so. But the severest of all cruelty, fracturing the jaw, lacerating the mouth and tongue, (which latter in some instances has been cut off through the use of curb bits, the extra leverage of which was considered by the author of a work on bitting, as its chief recommendation) remains unpunished, for the simple reason that the most delicate and sensitive organ in the animal has been totally overlooked.

Yet we are supposed to live in an era of civilisation, with a richly endowed Society for the Prevention of Cruelty to Animals, whilst thousands of sensitive delicate mouths are being torn, tongues paralysed, and jaws fractured in the most horrible manner. Anyone doubting this assertion can easily be convinced of its truthfulness, as in one stable within a mile of our office two of the inmates have endured this barbarous treatment whilst in the ownership of persons who, more than likely, are contributors to the different Associations for preventing cruelty to animals.

As a preventive for lameness, to commence operations on the teeth would appear to some very ludicrous, yet common sense and practice would convince them that this would be the proper means of preventing interference, one of the chief causes of lameness in young horses.

Young horses fully developed show signs of fatigue and weakness after a journey, and interfere, some striking the fetlock joint, others the common bone; this is termed "speedy cutting." Some grab the quarter of the fore-foot with the toe of the hind foot, or overreach.

In such cases the ordinary practitioner would treat locally, possibly advise different shoes, order tonic balls or condition powders, and a few days' rest (the latter would benefit mostly and give temporary relief).

Now supposing there were irregularities of the teeth, as is usual with all young horses, the first treatment should be to put them in perfect order, so as to promote mastication and good digestion, to enable proper assimilation of the nutritive qualities of the food, and thereby ensure increased strength and condition, thus removing the original cause of the weakness.

It may seem equally absurd to some of our readers to assert that operating on the teeth will prevent pulling and other vices, but that it is not so is proved by the following incident. A pony that we treated had changed owners for no other cause than that none of them had been able to drive him with ease, although various bits and contrivances had been tried. The primary cause must first be discovered, which in this instance was a decayed tooth, the removal of which effected an instantaneous cure. The pony is now driven in a plain straight bit without a curb chain, by the present owner, an elderly gentleman, who appreciates the animal's quietness and docility so much that no amount of money could part them.

In conclusion, we earnestly desire to impress on our readers that most of the disagreeable habits and dangerous vices contracted by horses are generally due to the want of knowledge on the part of their taskmasters, who sometimes imagine they are a species of wild animal, instead of being the most domesticated and intelligent; and when practical treatment and kindness fail, it is because there is not enough of it.

WOLF TEETH.

WOLF teeth (*Dentes Lupini*) were already known in the ancient times, but their rudimentary condition and inconstant appearance gave rise to a deal of controversy, so much so, that their existence was denied by many. They are very small and shelly, similar to the molars in the wolf, from which they take their name; they differ in size, form, and shape, also the times of breaking through and duration; in the upper jaw they are seldom absent in the young animal, and occasionally appear in the lower jaw, and if found there are generally smaller in size.

They appear in front of the first pair of molars, varying in distance from a half to one and a half inches, generally a little towards the inside, more so in the lower jaw. The crown is sometimes flat and compressed, or pointed and uneven, at times rounded; the root is cylindrical in shape, of different lengths, so that the whole tooth consists of a small shell joined to the flesh. They appear during the third and sixth month after birth, but when only slightly developed do not break through, as is often the case in the lower jaw.

They are generally shed during the sixth and eighth year, occasionally remaining till old age.

As the presence of wolf teeth in the lower jaw has been denied by many, we will here give our researches.

In a great number of foals' heads which we have examined (aged from one to two months) we found in the majority signs of the development of this tooth; upon removing the periost or membrane covering the bone of the jaw, close in front of each row of molars there appeared a small cavity about one-twelfth of an inch in diameter, closely resembling that in the upper jaw, containing a small wart-shaped elevation on the edge of the cavity opposite the adhesion to the periost, which is to be considered as the part from which the tooth is developed.

These bastard teeth compare for uselessness with the dew claws in the dog—they are not required for any practical purpose, on the contrary, are in the way; the teeth even more so, as anything taken into the mouth and coming in contact with them, causes pain. One of the first indications of these tormentors is refusing to be bridled, carrying the head on one side when at work, rearing and star-gazing; some horses will not go up to the bit, others become bad-tempered and pull.

These teeth must be carefully extracted with forceps specially made for the purpose; if nipped or broken off the suffering will be even worse, and it will be far more difficult to extract the root.

THE MOLARS.

THE molars are of a peculiar and very complicated construction, more so the upper, which have twice the amount of enamel intersected with the soft bony substance. In the process of grinding this soft part wears away, leaving the enamel projecting in ridges on the surface. It is this uneven surface which enables the animal, by the side movement of the jaws, to grind the corn and other hard foods, and should therefore not be interfered with when operating on the edges of the teeth.

The three first pairs of molars which the foal has shortly after birth are temporary, and replaced by permanent ones between the third and fifth year.

The fourth pair of permanent molars break through after the twelfth month, and are followed during the next two years by the fifth and sixth pairs of permanent molars.

As the fourth pair of molars are the first permanent ones to appear, it is more than likely, having regard to their greater wear, that the irregularities to which we refer are due to this fact.

The six pair of permanent molars in each jaw are of considerable size, with proportionately short roots and large crowns, which gradually force their way down to replace those worn by the process of grinding food.

The molars making their appearance at intervals, the wear of them will have a great deal of influence on their different lengths. It will be found that the three first pairs are generally shorter but wider than the others, and are longer in the lower, but not so broad as in the upper jaw. In a full-grown five-year-old horse of medium size, the length of the molars are between 2½ and 3½ inches.

The position of the molars correspond to the mastication of the food by the side movement of the lower jaw. As is well known, the molars form a pair of rows in each jaw, closely placed together so that no food can be pressed down between them during mastication; the first pair are placed in a vertical position, in the others the roots are more inclining backwards, by which the surface of the crowns are all kept closely together as they are pushed forward from the jaws; the rows incline slightly inwards in the lower jaw and outwards in the upper. They are the same length—about one-third that of the head.

The distance between the inner surface of the first pair in the upper jaw is 2 inches, and between the two last pair 3 inches, in the lower jaw 1½ and 2½; so that when the jaws are closed the outer part of the grinding surface in the lower is placed against the inner grinding surface of the upper row, which overlap the lower row.

Now when the horse commences to feed, the side movement of the lower jaw brings the two surfaces of the molars into play, which is noticeable by the grinding sound familiar to horsemen, but when the teeth are out of order this sound is entirely absent. When this occurs an examination of the molars should be made at once, when, as a rule, it will be found that the inner edge of the lower molars and the outer edge of the upper molars are jagged and uneven, thereby lacerating the mucous membrane of the tongue and mouth. The animal is then naturally shy of moving his jaws, as each movement causes pain, in fact the food is sometimes retained in the side of the mouth so long that it becomes offensive.

As the grinding of the food devolves entirely upon the molars they are proportionately more worn than the incisors, but as they do not grow out any quicker, notwithstanding their greater use, therefore to enable the molars to meet increased pressure of the jaws is necessary which gradually forces the incisors from the vertical position into the horizontal position, as seen in aged horses. Exceptions occasionally occur whereby the incisors are not forced out sufficiently to allow the grinders to meet, which naturally leaves space between the molars, preventing mastication. The only remedy for this is to shorten the front teeth, but great care must be taken to remove only what is absolutely necessary.

An instance that might be of interest to breeders was that of a thoroughbred mare, that since losing her last foal had proved barren for two years. The mare was in a very poor condition, and on the advice of a veterinary surgeon was given tonics and artificial foods which seemed to have but little effect, and the mare was let out again. The grass was abundant and good, yet there was no sign of improvement, on the contrary the mare became weaker ; and on the advice of another practitioner she was again taken to the stable and given tonics, bran, and gruel, but beyond keeping the mare on her legs the treatment was ineffectual. There was still no inclination to eat. It was then decided to let her out again during the best part of the day, but a few hours afterwards she was discovered lying down in an exhausted condition, and with difficulty raised and taken into the stable. We were asked for advice, and on making an examination of the mouth diagnosed the case as that of starvation owing to the abnormal growth of the incisors, which, through some unaccountable freak of nature, had retained their vertical position ; there being a space of one-twelfth of an inch between the molars when the jaws were compressed it was therefore an utter impossibility to masticate sufficient food for existence, and what food was taken into the stomach would likely set up gastric troubles.

Now it is well known to scientists that when mastication takes place the salivary glands are brought into play; the saliva converts the starchy part of the food into sugar, which is then acted upon by the gastric juices and formed into lactic acid. When this process is imperfectly performed the nutritive qualities of the food are partly lost, as it was in the above instance.

Our treatment was to reduce the length of the incisors sufficiently to allow the molars to meet, and to recommend proper food for a few days until the animal became strong enough to digest the ordinary food.

On a second visit, two weeks afterwards, we found the mare feeding well, apparently in the best of health and improved condition, and with every promise of being able to have several foals.

Thoroughbred animals really require more attention paid to their teeth than the ordinary horse, as the slightest irritation will upset their temper, and there is no doubt that teeth trouble is the unknown cause of many horses running inconsistently in races.

THE AGE OF THE HORSE.

THE bean mark in the incisors or front teeth has for ages been regarded by veterinary surgeons and horsemen as the principal indication of the age, and nearly all the authorities on the subject allude to those as the main point for the guidance of the amateur.

This advice and practice have no doubt been the chief incentive for the unscrupulous dealer to employ men skilled in the art to engrave and burn five-and-six-year-old marks in the incisors in imitation of the genuine marks, which disappear with increased age.

Intending buyers should first carefully note the manners and disposition of horses brought for their inspection, and if in every other way suitable, obtain the services of a veterinary surgeon, experienced in equine dentistry, to examine for soundness and age.

The latter is of equal importance to owner and animal. Many horses are sold and passed as six years old that have been in active service for twice that length of time. Now, besides the actual difference in the value of animals at these different ages, the purchaser is likely to innocently commit cruelty by putting an aged animal to do the work of a six-year-old, which cannot be reasonably expected, so that misrepresenting the age cuts two ways.

It would be immaterial to anyone acquainted with our system whether the marks were natural, artificial, or absent altogether, as the shape and conformation of the incisors would be the principal guide.

There is nothing which can alter the shape or conformation of the teeth to make them appear younger, neither is it possible to alter the horizontal position of the teeth as they appear in the aged, to the vertical position towards each other of the two rows as they appear in the younger animal. And taking the teeth as rows, those of the aged animal would be almost straight from end to end, whilst those of the younger are crescent shaped.

Another, and probably the greatest, puzzle for the bishoper would be the inner lining of enamel surrounding the bean, which wears out with the natural mark and can never be replaced.

Now, taking these facts into consideration, it seems hardly possible that horsemen, however slight their experience, could be imposed upon, but it has so happened, and to a very great extent, and it would be impossible to count the great number of old bishoped horses in active service at the present time, many of which have passed examination and been certified as five and six years old.

A brief study of our system, which is based on the shape and conformation of the teeth, will enable anyone to know the correct age without depending on the bean marks.

INCISORS.

THE incisors or front teeth are pyramidal in shape, the surface being the bottom of the pyramid and the root the point; they are curved outwards, not so much in the lower as in the upper jaw. The teeth are not pointed equally towards the root, but deviate in the back part, which is not so wide as the front, and the whole tooth is compressed from the sides, so that the front part gradually decreases in width from the surface towards the root, whilst the sides have almost the same width through the entire length. This will be fully explained during the various periods into which we divide the age.

Fig. 1 represents a single incisor with a pocket-shaped cavity extending to about the middle of the tooth (towards the root). The length of the cavity is nine-twelfths to one inch from the surface in the lower, and is a little deeper in the upper incisor; it is not exactly in the middle, but a little closer to the back wall of the tooth.

The cavity is dark coloured owing to constituents of the saliva, and is filled with fine masticated food. There is an opening in the root to allow the blood vessels and nerves to enter; it is covered with enamel and is open to a depth of three-twelfths in the lower and six-twelfths in the upper, and is commonly called the bean hole.

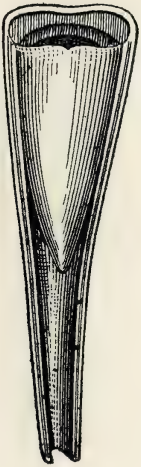

FIG. 1.

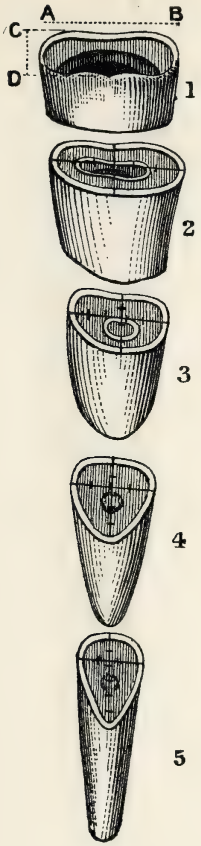

FIG. 2.

In the pointed part the bean is solid, yet there are cases in which it is open much further down even to the extreme depth.

Fig. 2 represents an incisor cut through in transverse sections showing the alterations in the shape of the surface at various ages, as it would appear by the natural wear, (1) and (2) (the first being the unworn surface); the width A to B is to the depth C to D as 2 to 1. In the following sections the width gradually decreases. (3) The proportion being as 3 to 2; (4) 1 to 1; (5) 1 to 2.

The foregoing will give the reader a preliminary description of the shape and conformation of the permanent incisors. The temporary or milk teeth are easily distinguishable by the narrowness of the neck or centre part of the tooth. In the following chapter we will deal with them as they appear from birth, and the different changes which take place each year.

There are three pairs of incisors in each jaw; the two in the middle are termed the *central*, the next two the *middle*, and those at each end the *corner* pair. The incisors in the lower jaw are generally used for telling the age; they are more easily examined, and less likely to show any irregularities.

About a fortnight after birth the central incisors appear, and are followed shortly after by the middle—generally the fourth week; the corner incisors appearing during the eighth to the tenth month. They are shed for permanent ones in the same order—the central in the third year, the middle in the fourth year, and the corner in the fifth year.

First year.—The corner incisors which appeared during the eighth and tenth month are fully developed at the end of the year, standing the same height as the other incisors; the cavity is filled in the central ones.

Second year.—The cavities are filled in all the incisors towards the close of this year, and the necks of the central incisors are plainly seen above the gums. The fourth molar is now in action.

Third year.—The central incisors which have fallen out during the thirtieth month are replaced by the permanent ones. The necks of the middle incisors are above the gums. The *fifth molar* has broken through, and the first temporary or corner molar is changed for a permanent one.

Fourth year.—The middle incisors are now shed for permanent ones, the corner incisors show wear, and the neck is plainly visible; the front wall of the central incisors is now worn. The sixth pair of molars are through, and the second pair of temporary molars are shed.

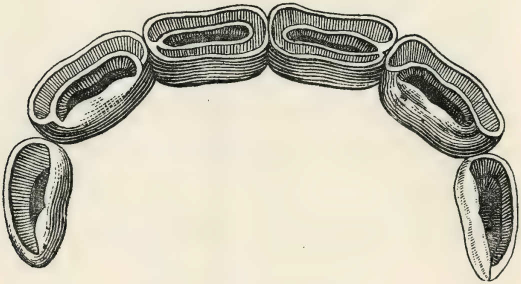

FIG. 3.—FIVE YEARS.

The permanent bridle teeth appear in the upper jaw, but seldom in mares.

Fifth year (fig. 3).—All the milk teeth are shed; the outer walls of the corner incisors are just through the gum; the front and back walls of the central, and the front wall of the middle incisors are worn. The third temporary molars are shed, and the permanent bridle teeth appear in the lower jaw.

This completes the first period.

SECOND PERIOD.

The grinding surface of the incisors is oblong in shape; the proportion of width as to depth is as 2 to 1.

Sixth year.—The corner incisors are full up; that is, the front and back walls are even, but the former is somewhat worn, whereas the back wall has not yet come into play.

The cavities in the central incisors are filled, but still dark coloured.

The back walls of the middle incisors are worn equally with the front.

Seventh year.—The back walls of the corner incisors are worn, the cavity in the middle incisors are filled, but the mark is still dark coloured.

In the central incisors the bean is white.

In the corner incisors of the upper row, a triangular indentation of the outer wall appears which is due to the side movement of the jaws acting on the front teeth; for although the width of the rows is the same in both jaws, the upper is more curved, which brings the corner incisors sideways against the corresponding incisors in the lower jaw during their wear.

The indentation disappears when the shape and formation of the two rows become more even, generally about the twelfth year.

Eighth year (fig. 4).—The cavities are filled in all the incisors; the bean in the corner incisors yet dark coloured, and in the middle and central, white. The back wall of the teeth is no longer parallel with the front, but commences, especially in the central, to bulge out at the back in the form of a half circle.

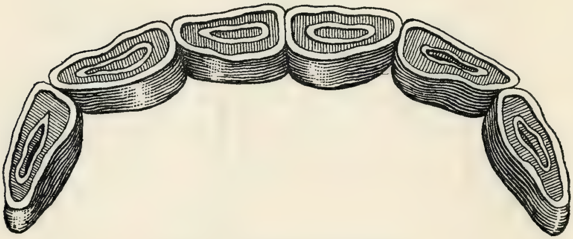

FIG. 4.—EIGHT YEARS.

THIRD PERIOD.

Ninth, Tenth, and Eleventh Year.—The grinding surface is still oblong, but the proportion of width as to depth is as 3 to 2.

The beginning of this period is plainly shown by the central incisors, the back wall of which forms a half circle; the bean, instead of being oblong, approaches the round form. Towards the close of the period the other incisors have also little round beans which appear close to the back wall, and in front of the bean, in the centre of the surface, a yellow spot makes its appearance.

The triangular indentation in the upper corner incisors is largest in the ninth year, but decreases towards the close of this period.

Thoroughbreds often retain the oblong appearance of the bean during the whole of this period.

FOURTH PERIOD.

Twelfth, Thirteenth, and Fourteenth Year. —The grinding surfaces of the incisors is nearly round; the proportion as to width and breadth is as 5 to 4.

At the commencement of this period the beans disappear in the central incisors; in the middle and corner incisors during the following years.

The yellow spot is becoming larger and more plainly seen. The back walls are becoming angular in the central, and partly so in the middle incisors.

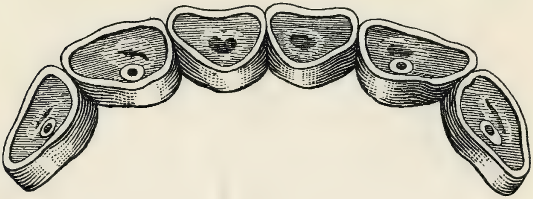

FIG. 5.—TWELVE YEARS.

In thoroughbreds the bean is seldom absent, but is very small and oblong in the beginning of the period; later, it becomes rounded in the central and middle incisors, as shown in fig. 6.

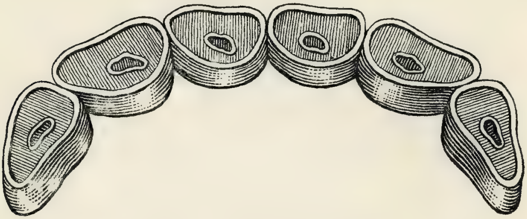

FIG. 6.—THIRTEEN YEARS.

Fifth Period.

Fifteenth, Sixteenth, and Seventeenth years.—The surface of the incisors is triangular, the width and depth are equal, but the row of incisors, instead of being crescent-shaped, approaches the straight line.

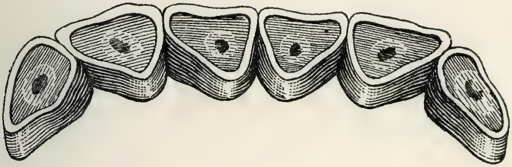

Fig. 7.—Fifteen Years.

During the close of this period a great change takes place in the shape and conformation of the teeth, as at the commencement of the second period the teeth were twice as wide as deep. They have now become so narrow that the depth exceeds the width in the central.

In thoroughbreds the beans disappear between the fifteenth and seventeenth year.

Sixth Period.

This period, from the eighteenth year, includes the higher age; the surface of the incisors is oblong, but in a different direction; it is now from front to back that the depth exceeds the width in all of them. The rows of incisors are now horizontal.

At times, the tooth wears so deep that the cavity is opened, and a little round hole appears in the centre of the yellow spot.

In some animals that have grazed on a sandy soil, the wear of the incisors exceeds the growth, they are therefore abnormally short, whereas in other instances of stable-fed animals the growth exceeds the wear. In this case the incisors are abnormally long.

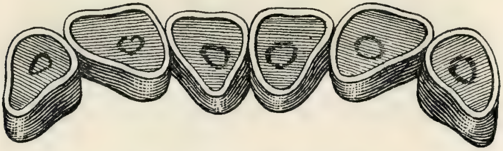

FIG. 8.—NINETEEN YEARS.

It will therefore be of the utmost importance, in making an examination for age, to know the normal length of the incisors, which is seven-twelfths of an inch for the central, six-twelfths for the middle, and five-twelfths for the corner, measuring the front of the teeth from the gum to the surface.

The growth and wear of the incisors yearly are about one-twelfth of an inch, so that with natural growth and wear the teeth would retain their normal length, but when the incisors are unusually short, the surface cannot be an approximate indication of the correct age, the extra wear and consequent shortening of the teeth causing the animal to appear older than he really is. In this case we must deduct one year for every twelfth part of an inch that is less than the normal length of the teeth.

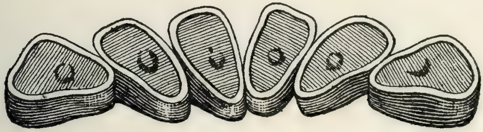

FIG. 9.—TWENTY-FOUR YEARS.

When the teeth are unusually long the surface would indicate a much younger appearance than is really the case; we must, therefore, add one year for every twelfth part of an inch exceeding the normal length of the teeth.

In the deformity known as parrot-mouth,

the upper incisors project in front of and beyond the lower ones; the teeth of both jaws become unusually long, as they are not worn down by friction. Such horses experience much difficulty in grazing, and should never be left entirely at pasture.

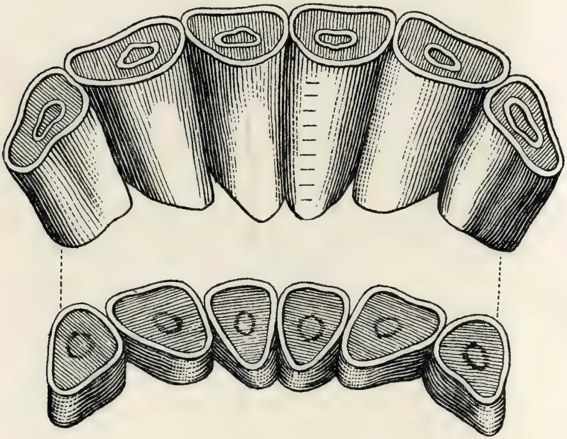

FIG. 10.

The above illustrations represent a row of teeth in which the surface shows about nine years, but the teeth are ten-twelfths of an inch too long; by removing this extra length the surface, as shown in the lower row, indicates the right age about twenty years.

A FEW HINTS ON EXAMINING AND OPERATING ON THE TEETH.

THE amateur operator will be somewhat handicapped by the lack of proper instruments; those in present use are unnecessarily heavy and unpractical. The blade of the rasp should be perfectly straight to lay flat on the edges of the teeth, except those used for the corner molars, which are slightly bent and made to cut on both sides.

It is partly due to inferior instruments of antique pattern, and the teeth having been rasped on the wrong part, that the beneficial effect of this branch of equine dentistry is almost unknown in this country, but we are pleased to learn that Messrs. Arnold and Sons are now manufacturing improved instruments for the purpose; illustrations of some of these are shown on the last two pages.

In the preceding pages of this work the molars and their effect on each other, occasioned by the process of grinding, has been fully described. It is therefore only necessary to explain that the outside edges of the upper and the inside edges of the lower molars become irregular, jagged, and sharp, and are therefore the parts that require the most attention, except the first and sixth pairs of molars, which should also have the corners rounded.

It is necessary to make an examination of the teeth before commencing operations, and for the benefit of owners and others who cannot at all times secure the services of a specialist, we advise the following methods, illustrated with diagrams, as the most practical and free from risk.

Stand in the position indicated in Fig. 11, commonly called the near side; hold the halter or bridle with the right hand; place the left hand flat on the nose of the animal with the thumb extending upwards inside the mouth, and parallel with the upper row of molars; the jags or sharp edges will be easily felt.

Before withdrawing the hand examine with

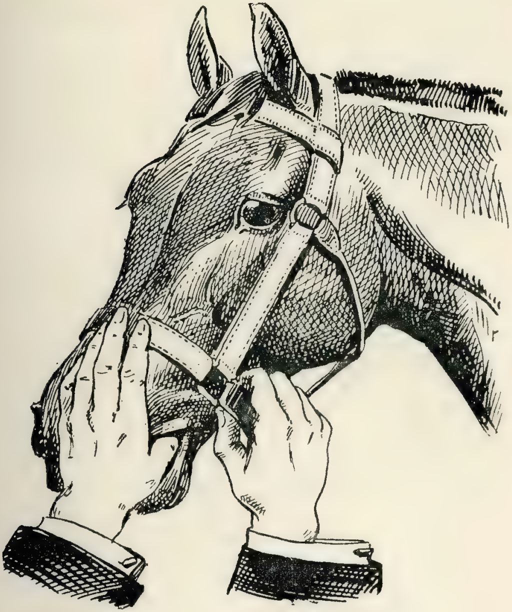

FIG. 11.

the thumb the roof of the mouth, about one inch in front of the first molars, for the presence of wolf teeth.

To examine the off side molars, the position of the person and hands are reversed, as shown in fig. 12; the halter or bridle is held by the left hand, the right is laid flat on the nose, with the thumb extending in the mouth upwards.

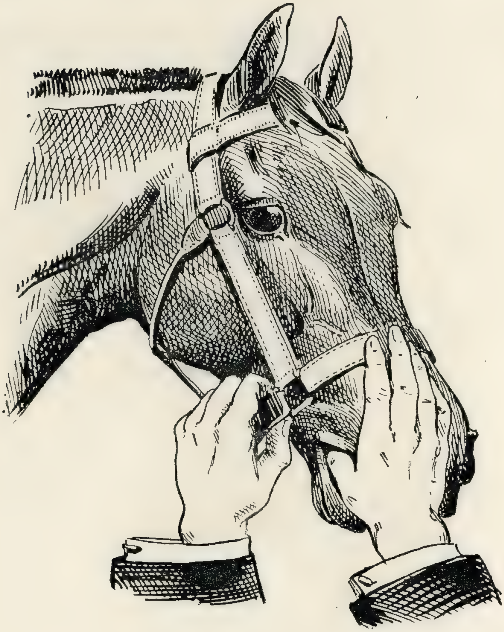

FIG. 12.

By these methods a cursory examination can be made by any one, and if universally practised would be the means of preventing unnecessary punishment with severe bits and other contrivances.

No matter what habit or vice is exhibited, the teeth should be first inspected. If found irregular or irritating, the remedy is easy, simple, and, when properly executed, permanent. This is also applicable if the animal is suffering from any digestive disorder; perfect teeth will aid digestion and hasten recovery.

The lower molars can be examined, when making a thorough examination of all the teeth, by the following methods, which is also adapted for operating.

Turn the animal round in the stall, and piller rein loosely on both sides, always allowing sufficient space behind, so that the animal can back a step without coming in contact with the manger; horses seldom rear if they can move backwards. Stand directly facing the head. With the right hand take hold of the near side of the halter; insert the left hand (back uppermost) gently into the mouth, near the molars, grasp the tongue, and withdraw out of the side of the mouth. A slight turn of the wrist upwards will allow the two first fingers to catch hold of the billet ring of the halter on that side; the right hand is then free to examine the near side teeth.

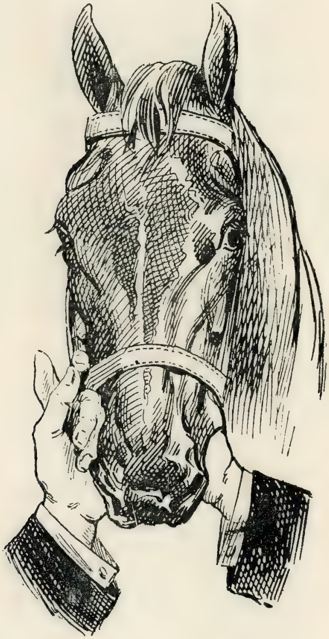

FIG 13.

To do this, insert the hand upwards between the upper molars and the inner side of the mouth. Keep the hand perfectly flat, carefully note the condition of each of the six upper molars before withdrawing the hands, and if it is intended to use any instruments, they should be convenient on that side. Do not let go the tongue whilst the hand is in the mouth.

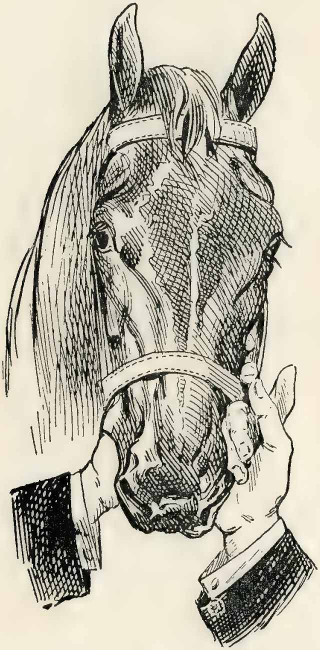

FIG 14.

The position is entirely reversed to examine the offside teeth (fig. 14).

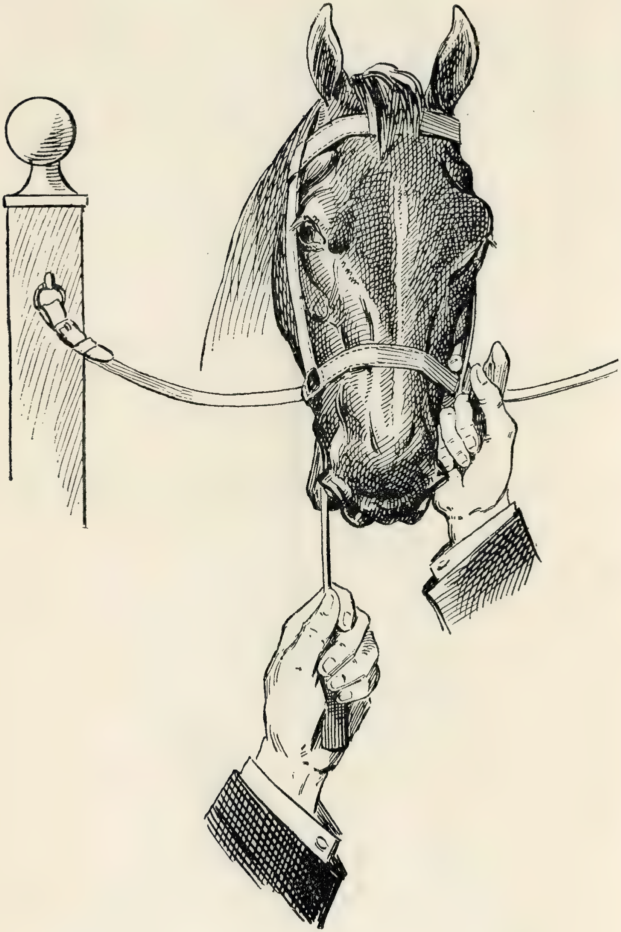

Fig. 15.—Operating with the Left Hand.

By adopting the foregoing methods, the operator can work without the aid of an assistant, which in some instances, with nervous animals, is much preferable, but should it be found necessary to employ help, the latter can hold the tongue in the positions indicated.

It is advisable to examine the molars thoroughly, as cases occur where one of them is absent. If so, the corresponding one, having no surface to wear against, continues its growth, often deviating from the straight line, and grows in a slanting direction. In this case the extra growth must be cut off, or if there be symptoms of decay, the molar extracted.

Toothache is of more frequent occurrence than is generally supposed; the symptoms are usually shown when eating or drinking cold water, the animal will suddenly stop and throw the head to one side, slightly open the mouth as if something sharp had punctured the parts, and very often drop his feed. There are other indications which the skilful practitioner will notice.

The sharp and sudden pain will often

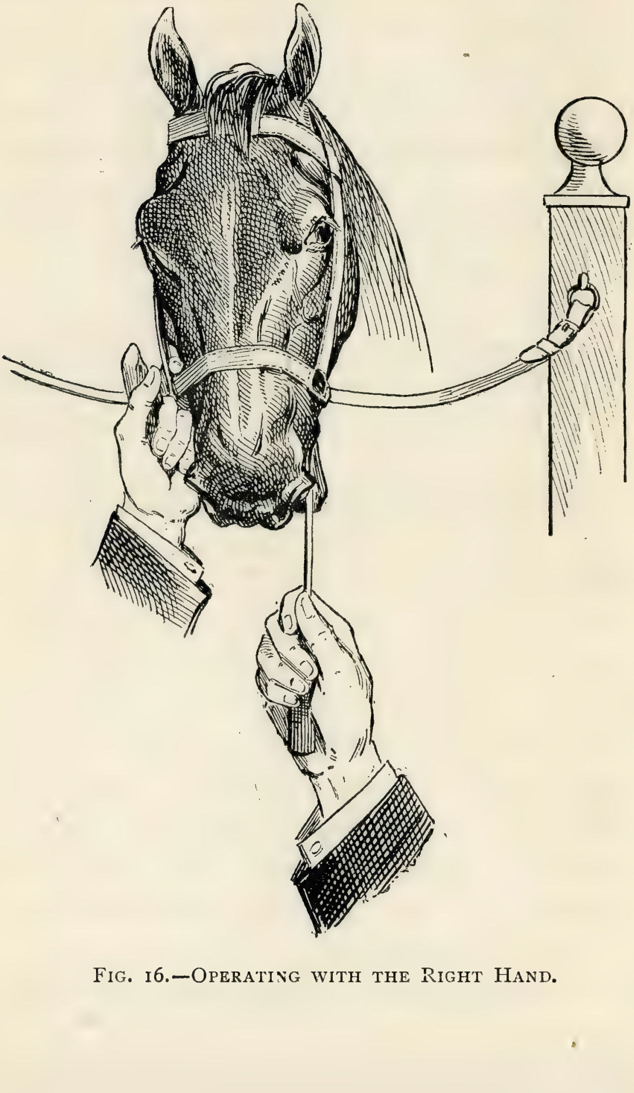

FIG. 16.—OPERATING WITH THE RIGHT HAND.

cause the horse to plunge and bolt, generally supposed by the rider and driver as due to fright.

Side pullers and horses that *hold* the *bit* can be permanently cured of these dangerous habits by operating on the corner molars, but the services of a skilful dentist are necessary in these cases.

Parrot-mouthed horses should be occasionally examined, as sometimes the lower teeth become so long that they bruise the bars, or roof of the mouth. In such cases they must be shortened by the saw or rasp.

The one great secret of horsemanship is kindness. Without this, the path is liable to be rough, especially with animals that have been ill-treated. They are slow at forgetting, and the principal point is to regain their confidence. Never thrust the hand or instrument rudely into the mouth. Give them an opportunity to see and learn what is going to take place. The rasp or any other instrument it is intended to use should be held close to the nose a few seconds so that they can see and smell. In cold weather it is advisable to steep the instruments in warm water before using.

CANINE.

The teeth of the dog consists of three pairs of incisors and one pair of canines in each jaw; six pairs of molars in the upper and seven pairs of molars in the lower jaw.

The temporary teeth are three weeks breaking through, and are all in use when the puppy is eight weeks old.

The breaking through of the permanent teeth commences in the fourth month, and is finished during the seventh month.

During dentition, especially in the fifth and sixth month, when the permanent molars are developing, dogs occasionally suffer from toothache; they show it by holding the head low, and to one side, often attempting to strike the mouth with their paws—are also shy and dull; the appetite is variable, with disinclination to eat hard foods, sometimes taking it into the mouth and dropping it out again. One of the most dangerous symptoms is epileptic fits, which are often prolonged until the teeth break through.

These fits are sometimes ascribed to other causes, but an examination of the mouth will show, in most cases, a swelling of the gums, which become dark coloured, accompanied by excessive heat, and there doubtless exists severe pain.

In this stage the feeding of dogs is of the utmost importance. Nutritious food is essential after weaning, and the best is raw meat, minced or chopped, a sufficient quantity of which should be given daily; the other foods should be soft and slightly laxative.

Young dogs require strengthening foods to enable them to withstand distemper, to which they are more or less subject; if weak and debilitated when attacked with this or any other disease, the result is most generally fatal.

Sweet and hot foods are injurious, and often cause decayed teeth and the unpleasant odour sometimes associated with pet dogs.

At times a dark yellow crust of tartar forms on the teeth, which pressing continually on the gums causes the latter to waste, when the teeth become loose, and suppuration ensues. Sometimes the teeth fall out or become irregular. The first treatment is to remove the tartar with a scalpel made specially for the purpose, and thoroughly cleanse the parts. The loose teeth must be extracted.

Caries of the teeth frequently occur in pet dogs of advanced age, caused mainly through improper food, or biting hard substances, whereby the teeth are split or broken, and therefore decay; the symptoms are similar to toothache.

Upon examining the affected teeth, there will be found black grey spots with a carious cavity in the centre of the tooth, often reaching to the nerve.

The treatment is to extract the affected teeth, otherwise they may break off, leaving the roots to cause more serious trouble, and also prevent the remaining teeth becoming affected.

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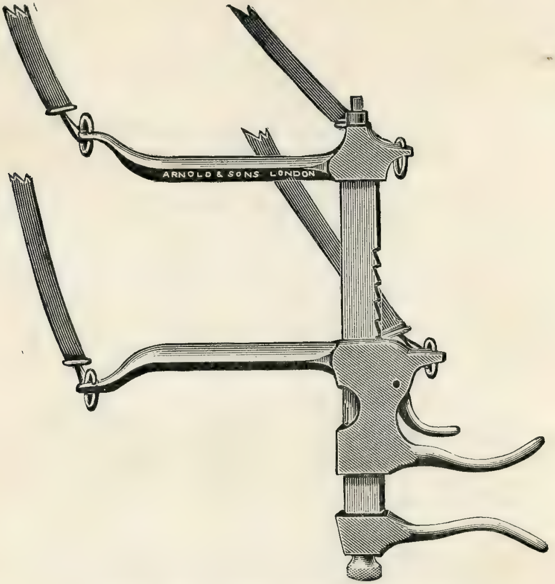

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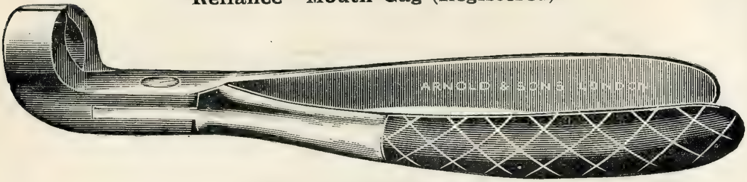
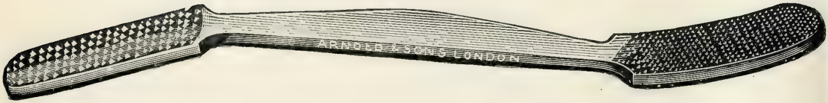


Incisor Cutting Forceps.



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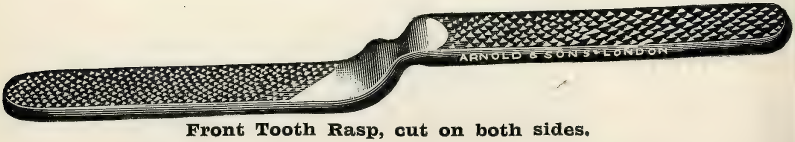

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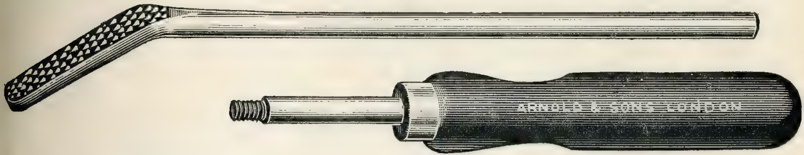
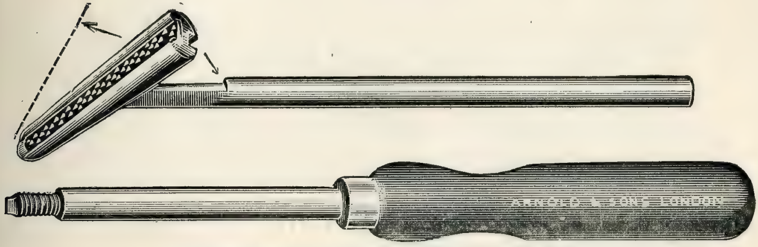


Short-angled Rasp for Finishing Two First Upper and Lower Molars.



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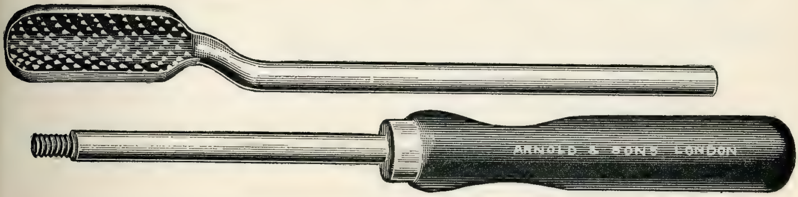

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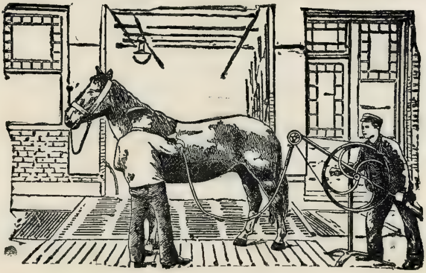

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